

WHAT WE CLAIM IS:

1. A treatment device, comprising:
 - an extraction mechanism configured to extract a tissue sample;
 - a lysis mechanism coupled to the extraction mechanism, where said lysis mechanism is configured to induce cell lysis of said tissue sample to produce a lysed tissue sample; and
 - an administration mechanism coupled to both said extraction mechanism and said lysis mechanism, where said administration mechanism is configured to administer said lysed tissue sample to a patient.
2. The treatment device of claim 1, wherein said extraction mechanism comprises a syringe having a chamber adapted to couple with a collection needle.
3. The treatment device of claim 1, wherein said patient is a human.
4. The treatment device of claim 1, wherein said patient is an animal other than a human.
5. A treatment device, comprising:
 - an extraction mechanism configured to extract a tissue sample, where said extraction mechanism comprises a chamber adapted for coupling to a collection needle;
 - a lysis mechanism disposed within the chamber, where said lysis mechanism is configured to induce lysis of said tissue sample into a lysed tissue sample; and
 - an administration mechanism coupled to both said extraction mechanism and said lysis mechanism, where said administration mechanism is configured to administer said lysed tissue sample to a patient.
6. The treatment device of claim 2 or 5, wherein said chamber is coupled to said collection needle.
7. The treatment device of claim 2 or 5, wherein said extraction mechanism further includes a plunger configured to alter a pressure within said chamber of said extraction mechanism so as to extract said tissue sample and administer said lysed tissue sample.

8. The treatment device of claim 1 or 5, wherein said extraction mechanism is a biopsy device.
9. The treatment device of claim 8, wherein said biopsy device includes a stylet and cannula.
10. The treatment device of claims 1 or 5, wherein said lysis mechanism is selected from a group consisting of: a pair of rotatable cylinders, a pair of intermeshing rotatable gears, a grate, a tortuous path, rotatable blades, a cooling mechanism, a heat exchanger, an ultrasonic mechanism, an ultrasonic probe, and any combination of the aforementioned.
11. The treatment device of claim 2 or 5, wherein said administration mechanism comprises an administration needle in fluid communication with said chamber of said extraction mechanism.
12. The treatment device of claim 2 or 5, further comprising an additive mechanism in fluid communication with the chamber of said extraction mechanism, and configured to add an additive solution to said lysed tissue sample before said lysed tissue sample is administered to said patient.
13. The treatment device of claim 12, wherein said additive mechanism comprises a syringe in fluid communication with said chamber.
14. The treatment device of claim 1 or 5, wherein said extraction mechanism and said administration mechanism are the same mechanism.
15. A treatment device, comprising:
 - an extraction mechanism configured to extract a tissue sample, where said extraction mechanism includes a syringe type device having a chamber adapted for coupling to a collection needle and adapted for coupling to an administration needle;
 - a lysis mechanism disposed within the chamber, where said lysis mechanism is configured to induce lysis of said tissue sample into a lysed tissue sample; and
 - an administration mechanism coupled to both said extraction mechanism and said lysis mechanism, where said administration mechanism is configured to

administer said lysed tissue sample to a patient, and where said administration mechanism at least partially includes said syringe type device.

16. The treatment device of claim 15, wherein said chamber includes said tissue sample selected from the group consisting of: a tumor sample; a tumor sample of a human, a tumor sample of an animal other than a human; a tumor sample that has been lysed and mixed with a fluid and homogenized; a tumor sample of a human that has been lysed and mixed with a fluid and homogenized; a tumor sample of an animal other than a human that has been lysed and mixed with a fluid and homogenized; an infected cell sample; an infected cell sample of a human; an infected cell sample of an animal other than a human; an infected cell sample that has been lysed and mixed with a fluid and homogenized; an infected cell sample of a human that has been lysed and mixed with a fluid and homogenized; and an infected cell sample of an animal other than a human that has been lysed and mixed with a fluid and homogenized.

17. A treatment device, comprising:

a lysis mechanism configured to induce cell lysis of a tissue sample; and
an administration mechanism removably coupled with said lysis mechanism and configured to administer said lysed tissue sample to a patient.

18. The treatment device of claim 17, further comprising an extraction mechanism configured to extract tissue from a subject, wherein said extraction mechanism is removably coupled with said lysis mechanism.

19. A method for treating a cancer, comprising:

extracting a tissue sample from a tumor into a chamber of a treatment device;
lysing said tissue sample into an lysed tissue sample within said chamber of said treatment device; and
administering said lysed tissue sample directly from said treatment device into a patient.

20. The method for treating a cancer of claim 19, further comprising, before said extracting, attaching a collection needle to said chamber.

21. The method for treating a cancer of claim 20, further comprising, before said

extracting, inserting said collection needle into a tumor core of said patient.

22. The method for treating a cancer of claim 19, further comprising, before said administering, storing said lysed tissue sample.
23. The method for treating a cancer of claim 19, wherein said lysing comprises blending, grating, crushing, thermal treating, or sonication of said tissue sample.
24. The method for treating a cancer of claim 19, wherein said lysing comprises:
 - cooling said tissue sample to at least -196 degree Celsius for between five seconds to ten minutes; and
 - warming said tissue sample to approximately 37 degrees Celsius for between five seconds to ten minutes.
25. The method for treating a cancer of claim 19, wherein said lysing comprises:
 - cooling said tissue sample chamber with liquid nitrogen for between approximately five seconds to ten minutes; and
 - warming said tissue sample by subjecting said tissue sample chamber to a water bath at between approximately 37 degrees Celsius for between five seconds to ten minutes.
26. The method for treating a cancer of claim 19, further comprising, before said administering, adding an additive solution to said lysed tissue sample.
27. The method for treating a cancer of claim 26, wherein said additive solution is selected from the group consisting of one or more of: a cytokine, an adjuvant, an antibody, a biological response modifier, an agonist of a ligand, or an antagonist of a ligand, a receptor, or a signal transduction molecule of the immune system, an anticancer agent, and any combination of the aforementioned.
28. The method for treating a cancer of claim 26, wherein said additive solution is selected from the group consisting of one or more of: a saponin adjuvant, a heat shock protein (HSP), an complex of HSP-antigenic peptide complex, a complex of antigenic molecules, a A2Malhpa 2 macroglobulin, a lipopolysaccharide(LPS)n, an immunostimulatory

oligonucleotide, an anti-4-1BB antibody, an anti-CTLA4 antibody, an anti-OX40, and any combination of the aforementioned.

29. The method for treating a cancer of claim 19, further comprising, before said administering, replacing a collection needle with an administration needle.
30. The method for treating a cancer of claim 19, further comprising, before said administering, inserting an administration needle of said treatment device into said patient at a different location to where said extracting occurred.
31. The method for treating a cancer of claim 19, wherein said tissue sample is a tumor core.
32. A method for treating a cancer, comprising:
attaching a collection needle to a chamber of a treatment device;
inserting said collection needle into a tumor;
extracting a tissue sample from said tumor into said chamber of said treatment device;
lysing said tissue sample into a lysed tissue sample within said chamber of said treatment device;
adding an additive solution to said lysed tissue sample;
replacing said collection needle with an administration needle;
inserting said administration needle of said treatment device into a patient at a different location to where said extracting occurred; and
administering said lysed tissue sample directly from said treatment device into said patient.
33. A treatment method, comprising:
extracting a tissue sample from a patient into a treatment device;
lysing said tissue sample into an lysed tissue sample within a chamber of said treatment device; and
administering said lysed tissue sample directly from said treatment device into the patient to produce an immune response.

34. A treatment method, comprising:
lysing a tissue sample into a lysed tissue sample within a chamber of a treatment device; and
administering said lysed tissue sample directly from said treatment device into a patient such that an immune response is produced.
35. The treatment method of claim 34, wherein said tissue sample is obtained from the group consisting of the patient, a human other than the patient, a mammal, and a tissue culture.
36. The treatment method of claim 34, wherein said immune response is directed toward an infectious disease or a cancer.
37. A kit for a device for producing an immune response, comprising:
a lysis mechanism configured to induce cell lysis of a tissue sample;
an administration mechanism coupled to said lysis mechanism, wherein said administration mechanism is configured to administer said lysed tissue sample to a patient; and
instructions for using said device.
38. The kit of claim 37, further comprising an extraction mechanism configured to extract tissue from a subject.
39. The kit of claim 38, wherein said extraction mechanism includes a collection needle, a biopsy needle, a stylet, or a cannula.
40. The kit of claim 37, wherein said administration mechanism includes an administration needle.
41. The kit of any one of claims 37 to 40, further comprising at least one biologically active additive.
42. The kit of claim 41, wherein said biologically active additive is selected from the group consisting of one or more of: a cytokine, an adjuvant, an antibody, a biological response modifier, an agonist of a ligand, or an antagonist of a ligand, a receptor, or a signal

transduction molecule of the immune system, an anticancer agent, an anti-infective agent and any combination of the aforementioned..

43. The kit of any one of claims 37 to 42, further comprising a buffer.
44. The kit of any one of claims 37 to 43, further comprising a tissue sample.